



US Army Corps
of Engineers®

Engineer Update

New Chief Nominated
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Survey results in; Corps still cares

By Bernard W. Tate
HQUSACE

Earlier this year, the Corps of Engineers asked its employees some tough questions. They answered honestly and some of the things we learned were:

- Most of the employees really care what happens to the Corps.
 - The majority feel that the Corps strives for excellence and does quality work.
 - Many value the Corps' sense of cooperation, and feel that Corps employees display high ethical standards.
 - We rate the Corps higher in most categories than federal employees overall rate their agencies.
- But a lot of the employees also feel that Corps leadership does not welcome change; many see unfairness in workload distribution, disciplinary actions and conflict resolution; and most feel that red tape and interruptions interfere with getting the job done.

These are just a few results detected by the Command Climate Survey administered throughout the Corps in February and March, according to Richard Thompson, a military sociologist with Human Resources who spearheaded the survey project.

"As we all contend with the many forces of change impacting our organization, including downsizing, increasing management responsibilities, reorganization and consolidation, our Vision remains providing our Nation with quality, responsive engineer services," wrote Lt. Gen. Arthur E. Williams, former Chief of Engineers, in a memorandum kicking off the survey. "I ... want to know how we are progressing from the vantage point of our ... members."

The Command Climate Survey is a standard survey provided by the Office of Personnel Management (OPM). It was administered throughout the Corps to a large, randomly-selected sample of employees in 64 locations. Sample sizes ranged from 20 percent of the work-force at larger locations, to 100 percent at small locations. The Directorate of Civil Works and the Directorate of Military Programs funded and supported the survey project.

Corps leadership required a response rate of not less than 70 percent, a very high goal, since conventional mail-out surveys have a response rate of only 20 to 40 percent.

To guarantee high response, the survey was administered in a conference room at each site, and people filled out the survey in the anonymity of a large group. Only isolated field offices received mail-out surveys.

Thanks to in-person, group administration, 12,123 Corps employees responded to the survey, a response rate of more than 80 percent. This has given the Corps' leadership an accurate view of the organization and its attitudes, according to Thompson.

The results were presented to the division commanders and laboratory directors on June 5 during the quarterly Command Management Review at HQUSACE.

Although the results and their meanings and

correlations are still being studied, some trends are already clear. For example, Corps employees have a higher regard for the Corps compared to how other federal employees feel for their organizations. (See Chart 1.)

"We were struck by that first question, 'I don't care what happens in my organization as long as I get paid,'" said Thompson. "Eighty-six percent of Corps members disagreed, compared to 80 percent of people in other government agencies. So across the government there is a high level of commitment; they care about their organizations."

"But the Corps' commitment is higher," said Thompson. "That was heartwarming and encouraging for General Williams. He said that despite all the things that have affected the Corps' people, they still have a high level of commitment."

But that doesn't mean everything is wonderful in the Corps of Engineers. There were a few areas where employees rated the Corps *lower* than federal employees in general. (See Chart 2.)

In addition, only 43 percent of Corps employees feel that their managers inspire them to take pride in their work, a tie with the government data.

"These are the kinds of things we set out to learn; we had to know the negative as well as the positive," said Thompson. "There's been stress in the Corps of Engineers, and the stress came through on the survey. The Corps' leadership needs to look at those results and decide what we can do about it."

The Corps' leadership wants to ensure that the survey results are evaluated and used. "Our leaders must take ownership of the data and use the information," said Maj. Gen. Pat M. Stevens IV, Acting Chief of Engineers.

In addition, the survey results were shared with the Leadership Enhancement and Development (LEAD) team during its meeting on July 11 at the Cold Regions Research and Engineering Laboratory. LEAD members plan to look at the findings in more detail.

"It's reassuring to know that we have in the Corps more teamwork and a higher level of commitment," said Thompson. "Even though everything is not wonderful, we are more together as an organization than the rest of the government. That's a very good note."

Chart 1

(All answers are percentage who agree, except where noted)

	Corps	Govt.
I don't care what happens in my organization as long as I get paid (percent "Disagree").	86	80
Employees are involved in improving quality.	61	52
High performance employees receive recognition from co-workers.	61	44
Employees maintain high ethical standards.	61	56
Employees understand organization's mission, vision and values.	59	49
How would you rate your overall satisfaction (percent "Satisfied").	55	39
Supervisors maintain high ethical standards.	54	45
How would you rate the organization (percent "Above Average").	51	28
Supervisors behave consistent with mission, vision and values.	45	40
Sufficient effort is made to get opinions of people who work here.	44	43
Employees have feeling of empowerment and ownership of work.	35	33

Chart 2

(All answers are percentage who agree)

	Corps	Govt.
Difference among individuals are respected and valued.	54	58
Top management is receptive to change.	32	34
Risk-taking is encouraged without fear of punishment for mistakes.	23	25

Wildlife returns to Chicago River area

Fox, hawks, geese seen as 'severely degraded' habitat improves

By Bret Rappaport

My two boys saw a red fox the other day in our suburban Chicago front yard. This is truly remarkable since we live in one of the most heavily urbanized parts of the nation. What makes it more remarkable is how the fox came to be there and who made it possible.

Through my backyard flows the West Fork of the North Branch of the Chicago River. Although for decades little more than a stagnant and near-lifeless drainage ditch, the West Fork is fast becoming a wildlife highway that leads to what you may think is a most unlikely place for a wildlife sanctuary—Corps of Engineers Reservoir No. 27, built pursuant to the Federal Watershed and Flood Prevention Act.

Severely degraded

The story of how the fox came to be seen by my sons starts about a century ago. Historically, the West Fork meandered through marshes and uplands. But the original water course was "improved." A channel was cut and meanders were straightened to increase surface drainage in the watershed. As flow increased, the stream became deeply channelized. Dredged and re-dredged over the decades, spoil material was heaped on the banks as a berm.

Farms gave way to homes with streets, driveways and other paved areas. Run-off increased sediment in the stream and the banks became thick with non-native cottonwood, boxelder, buckthorn and honeysuckle. The trees shaded out native grasses and forbs (any herb that's not grasslike) that would have stabilized the banks and prevented erosion.

The run-off from streets, lawns and other developed areas, coupled with an absence of vegetation to filter it, led to elevated concentrations of pollution in the streambed. A 1983 streambed sediment study found phosphorous, arsenic, chromium, iron, lead, and even traces of mercury, DDT, dieldrin, heptachlor epoxide and PCBs.

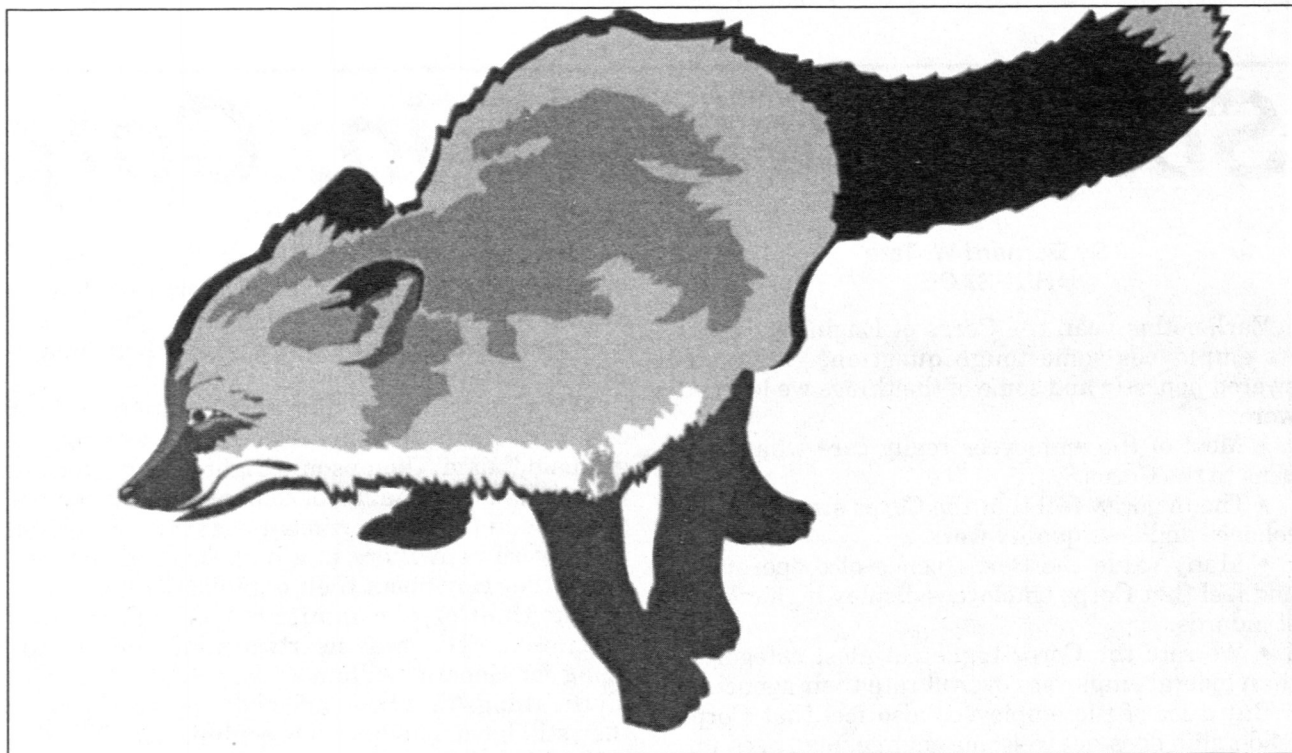
Sedimentation and pollution, coupled with the lack of riffles and pools resulting from channelization, rendered fish life nil. A 1980 study found one lone flathead minnow and five green sunfish.

Without native vegetation or fish life, birds and mammals vanished. In 1980, the Corps declared the stream "severely degraded."

Reversing mismanagement

In 1983, years of "watershed management" led to a massive flood. Millions of dollars in water damage caused planners to rethink flood control. Cornerstone of the new plan was Reservoir 27. But rather than build a huge concrete bathtub, the Corps (once the bane of conservationists) used the opportunity to reverse decades of mismanagement of the West Fork. Reservoir 27 would become not only a water retention basin, but also a wildlife and native vegetation sanctuary.

First, the 80-acre site was cleared of buckthorn and other exotics. Next, the 123 million gallon



basin was dug alongside the West Fork channel. Rather than just dumping the tailings anywhere, the Corps used the material to contour the remainder of the site.

Plant sanctuaries

Then, starting in 1989, the Corps began creating a mosaic of native plant communities. The 120-acre cedar glade was planted with 30 pounds of sideoats grama, 128 pounds of buffalo grass, and 8.5 pounds of rigid goldenrod and other forbs.

The 14-acre oak savannah was planted with big bluestem, little bluestem, prairie gayfeather, New England aster, and 10 other species of grasses and forbs.

The 15-acre southern mesic plant community has eight grasses and four types of forbs. The four-acre northern mesic plant community has a similar number, but a different combination of grasses and forbs. There is a six-acre mesic grassland planted with several rye species and bluestem.

The 10-acre dry grassland has a more complex plant mix that includes nine species of grass and three species of forbs.

In the emergent aquatic community, near the bottom of the basin, the Corps planted thousands of tubers, including burr reed, arrowhead, marsh smartweed, pickerel plant and others.

Animals return

As these plant communities establish, the scars of tilling and construction have disappeared. With the flora in place, the fauna is slowly coming back. A stroll through the reservoir offers a chance sighting of skunk, coyote, red-tailed hawk, woodpecker, Canada goose, great blue heron, egret, groundhog, vole, shrew, salamander, kestrel, bluebird, scarlet tanager, martin, barred

owl, bat, a dozen or more species of butterfly, and, of course, where the story began, a red fox.

Nationwide efforts

The Corps of Engineers has come a long way from the days when it served only to dig, dredge, dam and, in the process, ultimately degrade our waterways. Today, based on sound science and an appreciation of how nature works, the Corps has accepted that it is not nature's master but rather her partner.

The Corps' efforts to return and restore some of nature's balance in its watershed management are nationwide. Parts of the Mississippi are being restored to marsh and, in Florida, the Kissimmee River, which was straightened 100 years ago much like Chicago's West Fork, is being restored with riffles, swamps and native plant communities.

Corps and society "gone green"

In a quiet way, the Corps has begun to restore nature for man's sake, and in doing so restores nature for nature's sake. The Corps vision statement announces that the Corps will provide "quality environmental services." Tom Elder, the engineer for the Union Drainage District No. 1 that maintains the West Fork and Reservoir 27, says simply, "The Corps has gone green."

When the U.S. Army Corps of Engineers becomes green in spirit and practice, it says a lot about how far we as a society have come in recognizing our proper place (and that of the red fox) in nature's intricate web.

(Bret Rappaport is the president of Wild Ones Natural Landscapers, Ltd. This commentary originally appeared in the May-June 1996 issue of "Wild Ones Journal." Reprinted by permission.)





CREST questions

The article in the April *Engineer Update* concerning the CREST program was very interesting and extremely baffling. As I understand it, the CREST team leases land and facilities needed by the coalition forces in Bosnia and other places where violent unrest is occurring.

Does this mean that U.S. troops require permission in the form of leasing land before they enter a war-ravaged country? I worked for the St. Paul District Corps of Engineers for 30 years and I never heard of anything like this.

I'm sure we didn't have to follow such a procedure before the Normandy invasion in World War II.

Please give a little explanation about this in the next *Engineer Update*.

N.S. King
Minneapolis, Minn.

No, U.S. forces don't lease land before invading a hostile nation, but don't confuse an invasion with a deployment. It has been many years since World War II, and the world has changed.

World War II was the last conflict where the U.S. military could simply force entry into a nation and occupy the land and facilities it needed. Every conflict since has been fought wholly or in part in allied, friendly nations. In dealing with allies, we cannot just seize land and facilities; we must give fair exchange for using them. There have been extensive real estate operations in every recent conflict or deployment—Vietnam, Grenada, Panama, Desert Shield, Somalia, Haiti and Bosnia.

The Contingency Real Estate Support Team (CREST) is a group of Corps civilian real estate experts trained and prepared to deploy with the first forces to immediately start obtaining the land and facilities the soldiers need.

Of course, if the U.S. military must invade foreign soil, like we did in Grenada, we take and hold the objectives needed to assure victory. But don't forget that an invasion is a short-term, specialized operation. After the shooting is over, we are required to rent or lease what we use. This was true even during World War II. After our forces occupied an area and secured it from enemy action, as the civilian population returned we made every effort to give fair exchange for what we used.

You probably haven't heard of CREST because it's a fairly new innovation, organized in 1993, and Bosnia is its first extensive field operation.

The "Engineer Update" welcomes editorials and letters. All submissions must be signed; names will not be used if requested.

Address submissions to Headquarters, U.S. Army Corps of Engineers, Attn: CEPAC (Engineer Update), 20 Massachusetts Ave., N.W., Washington, D.C. 20314-1000.

Ballard Nominated for Chief of Engineers

Secretary of Defense William J. Perry announced Aug. 1 that the President has nominated Maj. Gen. Joe N. Ballard for appointment to the grade of lieutenant general and assignment as Chief of Engineers and commanding general, U.S. Army Corps of Engineers. Since July 1995, Ballard has served as the chief of staff, U.S. Army Training and Doctrine Command at Fort Monroe, Va.

Ballard was born March 27, 1942, in Meeker, La.

Corps upgrades Egypt airbase

By Joan F. Kibler
Transatlantic Programs Center

It was the largest single contract awarded in the Middle East by the Corps of Engineers since the major Saudi Arabian construction program in the 1980's.

Representatives from the Air Force Materiel Command, (AFMC), Transatlantic Programs Center (TAC), and the contractor (Dillingham Construction International Inc. and ABB SUSA Inc.) signed a contract in August 1992 to upgrade facilities at Gianaklis Air Base to accommodate the fourth sale of F-16 aircraft to the Egyptian government.

This past March, members of the Air Force, the Corps, the contractor, and the Egyptian Air Force gathered to celebrate substantial completion of the work done under that \$250 million contract.

The Egyptian Air Force now has "one of the best bases in Egypt," said Col. Mohamed Aboul-Ela, the Egyptian Air Force program manager for American weapons systems.

"The key to the success at Gianaklis has been the tremendous team effort," said Col. Guy Demoret of AFMC's Civil Engineering Squadron.

Wayne Henry, chief of TAC's Management Directorate, echoed the theme. "Numerous U.S. and Egyptian government agencies and the contractor brought this project to its successful completion, giving the user a magnificent air base."

Meeting the customer's needs

Gianaklis Air Base, in existence since the 1960's, sits on about 2,500 acres in a rural farming area of the Nile Delta. The program at Gianaklis, known as Peace Vector IV, represents the fourth sale of F-16 aircraft to the Egyptian government.

According to project manager Tom Jackson, the air base size required construction completion in three phases to meet the needs of the Egyptian Air Force.

Phase I, mostly housing and some industrial facilities, went to American International Contractors Inc. in December 1991. The \$23 million contract was completed in April 1994.

When the Phase II contract was awarded to the joint venture of Dillingham and ABB SUSA, the construction period was expected to go through April 1995, but additional work pushed completion back to February 1996.

Phase III construction is expected to be awarded next summer.

"Our greatest challenge was to complete the most critical facilities construction in time to meet the aircraft delivery date, while at the same time having the Egyptian Air Force mobilizing on base," said Amir Guirguis, lead facilities program manager for Peace Vector IV. "Our second challenge was to continue with the construction while the air base was occupied and active."

The air base is divided into three main categories of facilities, according to Richard Grimm, former Peace Vector IV resident engineer.

"The operational facilities support flying and maintaining F-16 aircraft," Grimm said. "These include airfield pavement and lighting, shelters and various aircraft maintenance hangars and shops."

"The industrial area contains supporting functions, such as munitions maintenance, operations and maintenance, and administration buildings," he said. "This area also includes the communications facility, motor pool, and power, water treatment and sewage plants. The power plant has five 1,250-kilowatt generators, and there are back-up generators."

The third area is life support, which includes housing, dining, medical, religious and recreation facilities.

The contract also called for building security fences, firefighting systems and base utility systems.

Operations and maintenance activities

As facilities have been completed and turned over to the Egyptian Air Force, the contractor has been required to perform aircraft operations and maintenance services under the existing contract.

Philip Dinello, chief of the Project Management Division overseeing Peace Vector IV, said that these services include items such as operating the water treatment plant and the sewage treatment plant, and providing on-call maintenance and support to the Egyptian Air Force. The services are essential for keeping air base operations functioning smoothly.

"We are extending Dillingham's and ABB SUSA's contract to continue providing these services (known as interim facilities support services) for the next year," Wahl said. "The contractor has a staff of 63, both Egyptian and American workers. Following this contract, we plan to use a joint Egyptian and U.S. Air Force program to provide operations and maintenance services."

Wahl and his remaining staff will oversee the operations and maintenance and warranty work until the Phase III construction contract begins.

Phase III plans

During the Phase II construction, the U.S. Air Force, Egyptian Air Force, and Corps team recognized that there were several features that could enhance operations at the air base.

"Those items that weren't appropriate to complete during Phase II were grouped into a package and combined with other items that had been identified for future construction during the early planning stages," Jackson said. "We recently received authorization from our Air Force customer to proceed with their requirements. We expect to have the architect-engineer firm under contract by late June."

The facilities are essentially enhancements to the current operational, industrial, and life support areas at the base. Design should be complete next spring, with construction award the following summer.

Corps buys, moves homes in flood project

Article and Photos
By Tim Dugan
Mobile District

One of the largest nonstructural flood control projects undertaken by the Corps of Engineers is nearing completion. Where houses, churches and businesses were damaged by flooding year after year, there is now the \$30 million Village Creek Flood Control Project in Birmingham, Ala.

Located in Jefferson County, the Village Creek Flood Control Project is nonstructural—it solves the flood problem by vacating the area instead of building a channel, dam or levee.

Buildings were removed and residents and businesses were relocated to provide a floodplain. The plan included acquiring and demolishing about 642 structures, primarily residences, in six neighborhoods.

"Flooding along Village Creek has been frequent and serious in recent years," said Carvel Deese, project manager. "A feasibility report was prepared in the early '80s and the project was authorized by Congress in 1986. In 1988 a cost-sharing agreement was signed with the city."

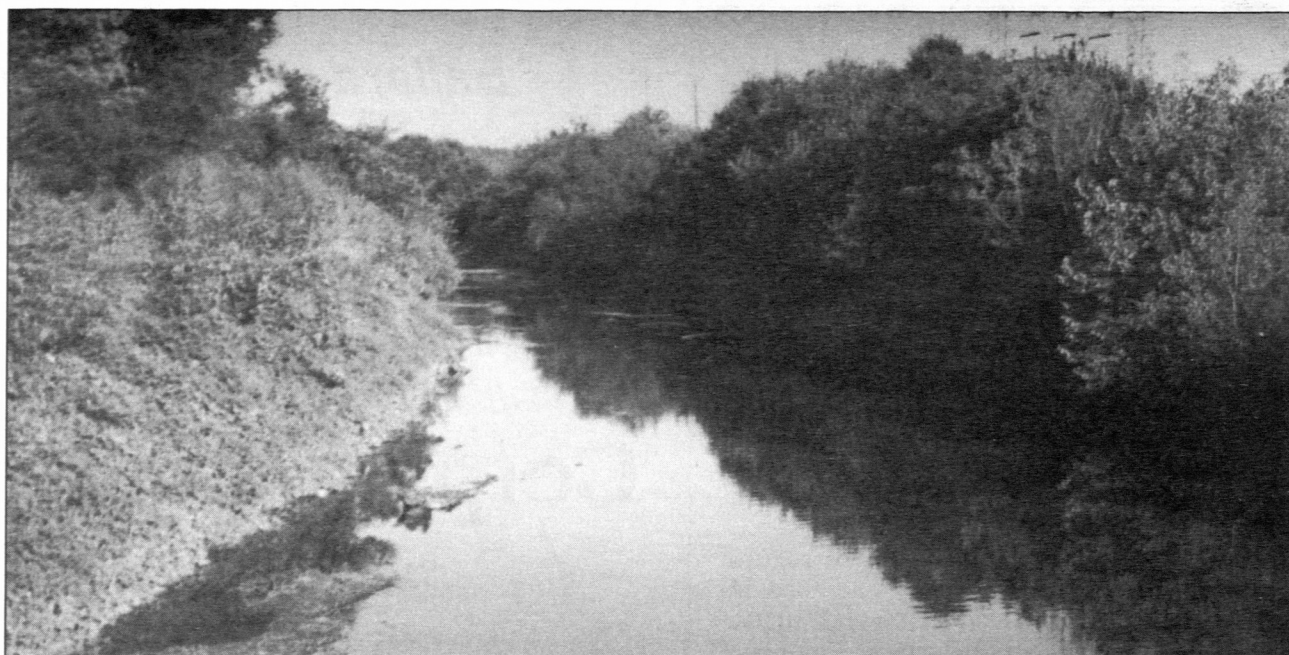
The Corps acquired the land for the nonstructural portion of the project, which was designed to remove all structures in the floodplain. The final stages are being completed. A few tracts are in the condemnation process, and the operations and maintenance plan is in effect.

The concept encompassed 1,000 structures until Corps headquarters called for a review. "We reviewed the original concept and narrowed the project scope to 600 structures," said Eric Nelson, study manager. "The study was completed in 1981."

During design, the Engineering and Planning staff determined floodplain specifications and the boundaries for structures that required removal and those that were optional.

Early in the project a modification by Congress allowed the Corps to purchase vacant lots under the Water Resources Development Act (WRDA) in 1990. The Corps acquired about 116 vacant lots so the city would own all property within the definite project boundaries.

The project included installing an emergency flood warning system. It has automated stream flow and rainfall gauges, a communications system, automated processing equipment, and computer software to forecast floods and generate contingency plans for response. It will help officials forecast flood dangers and alert residents to poten-



The Village Creek project is one of the largest non-structural flood control projects.

tial flood problems.

The Village Creek Project Office was established in January 1989. "We bought our first tract within two months," said L.E. "Bo" Lewis Jr., interim project manager.

Negotiating the purchase of churches, apartment complexes and businesses was a challenge. The Corps purchased whole sections or neighborhoods, except in the optional locations where tracts were spotted here and there. Selection was based on structure elevation in the floodplain.

"Many of these houses were just low enough to be in the project," said Tommie Pierce Jr., chief of Real Estate's Management and Disposal Branch. "The living floor elevations were measured in one-tenth of a foot increments."

Mandatory sales were structures in the heart of the floodplain. The optional structures met the height requirement but were isolated cases in a neighborhood that would otherwise remain untouched.

More people wanted their homes bought than the Corps was authorized to purchase. In most cases, selling the family home meant an improvement in living standards.

"Some of these homes were in bad shape, so buying them out was the best thing for many of them," Pierce said.

Most tract acquisitions were residential properties. There were 11 churches and three businesses removed, and 116 vacant lots acquired. An Indefinite Delivery Order contract was used to remove structures and asbestos-containing materials.

City and federal officials had to coordinate scheduling, plans, specifications, modifications, contract costs, public and community relations, and other project requirements.

One challenge was explaining the project to church groups. In one case, negotiators relocated a

congregation to another church nearby, avoiding turmoil.

Total cost (without channel construction) was \$29.6 million. The federal cost was \$22.6 million; nonfederal \$7.4 million. The city's share was 25 percent.

"The original estimate was \$49 million," Deese said. The revised estimate was \$30 million, a result of land and related costs being less than anticipated. So the project was completed under budget.

"The project is unique," Deese said. "It's not like building a canal or a dam. Rather than digging a ditch or building a dam we're solving the flood problem by moving people out."

Although coordination between federal and city officials was vital and participants cooperated well, the project still had challenges. Once tracts were purchased and houses demolished, people dumped trash, debris and old tires on the vacant lots. City officials fenced off new purchases to deter dumping. The city also blockaded some roads to prevent access.

Another problem was vandalism. As occupants vacated a residence or church, vandals came in and removed anything of value, such as doors, windows, aluminum siding and copper tubing. Several were arrested and charged with vandalism.

During the project one structure was discovered missing. Pierce called the police and said, "I want to report a stolen house." After the laughter subsided, Pierce explained the situation and a patrolman was dispatched.

Someone had loaded the house onto a trailer bed and moved it into the road. The police confiscated the truck.

"This project was satisfying to people concerned about the environment," Deese said. "It's creating a natural area—the floodplain. The people impacted by the project had a flooding problem anyway. The project takes away the uncertainties and fears of every time it rains and the creek rises that they will be flooded out."

The project is nearly finished. There are 16 federal condemnations remaining, and the city agreed to acquire 15 vacant lot tracts in areas proposed for recreation development. All structures have been acquired and removed or demolished.

The district gave city officials a manual to assist with carrying out their obligations under federal regulations. The city is responsible for operation, maintenance, repair and replacement and any rehabilitation. The city is also required to adopt regulations to prevent unwise future development and ensure compatibility with project protection measures.

The project has already reaped benefits. Birmingham experienced a flood last fall that would have flooded every structure that was acquired.



East Lake Bible Methodist Church was one of the churches moved to make way for the project.

Guard kicks up wind at Corps lake

Article and Photo
By Mary Beth Hudson
Tulsa District

One day this summer, Pat Mayse Lake near Paris, Texas, took on an international flair. That day, a different sort of vessel floated on the water—one which can travel almost 200 miles per hour, lift up to 26,000 pounds, and carry 33 passengers plus its crew.

The vessel was a CH-47D Chinook helicopter, and the international flavor came from the presence of company commanders, staff sergeants and an Air Force chief of staff—from Singapore.

The Corps of Engineers lake was the site of water training exercises conducted by Company G, 3rd Battalion, 149th Aviation Regiment, a Texas and Oklahoma National Guard unit which supports 16 CH-47Ds.

The Republic of Singapore Air Force recently purchased six Chinooks, and has a close relationship with the Dallas-headquartered guard unit.

"There's a saying, 'Helicopters don't fly—they beat the air into submission,'" said Sgt. Michael Smith, a soldier with the unit. As the huge machine approached, the smooth lake surface became choppy, and onlookers suffering in a breezeless, hot afternoon were treated to spray carried on winds up to 60 miles per hour.

The day-long training included three exercises for pilots, crew, divers and other unit members. First, pilots and crew practiced landing on the water, then taking off. Yes, the CH-47D *will* float but, like the Volkswagen Beetle, not indefinitely.

A second scenario saw soldiers in full uniform being air-dropped into the water after a simulated attack, swimming more than 100 yards to shore, gathering their gear and rifles, and then disappearing into the woods around the lake to rendezvous with other unit members.

The third training session consisted of soldiers being air-dropped into the water where divers helped them reach the helicopter's cable for a trip back up into its belly.

Divers and boats were in place during all exercises in case problems arose.

Frank Cooper, maintenance worker, and park rangers Jeff Paskin and Grady Dobbs helped with the training day.

A section of Sanders Cove was buoyed off for the exercise, and a Corps' boat was used to warn other boaters away from the area and to carry the unit's radioman and medic during the training scenarios. The Paris Fire Department sent two divers to help, and a member of the Powderly, Texas, Volunteer Fire Department provided his time and boat for the day.

Pat Mayse Lake with its adjacent National Guard lands was a natural choice for the training. Capt. Kevin Smith, active duty training advisor, contacted the lake office with the request.

The lake staff worked closely with the guard unit while the project was coordinated. Paul Gray, project manager, said he and the staff were happy to cooperate with the exercise, which promoted safety and provided some positive public relations for the lake.

The lake's location and the Corps' cooperation helped make the project a great success.

"The people here have been more hospitable than anyone," said Maj. Stephen Marksteiner, Company G commander. "The Corps of Engineers has been extremely helpful in supporting this operation."

Lt. Col. John F. Stoley, commander of 3rd Battalion, told lake personnel, "This is a special day for these soldiers. They're loving it, and you've contributed greatly."



Soldiers leap out of a CH-47D helicopter into Pat Mayse Lake.

Joint training saves lives

By Terry Holt
and Dale Davidson

Visitors to Marion Reservoir in Kansas have a greater chance of surviving water emergencies thanks to the joint efforts of several agencies. The Corps of Engineers and the Kansas Department of Wildlife and Parks have joined the Marion County Sheriff's Department and the Office of Emergency Medical Services to plan and train for response situations.

Those involved say the partnership was born out of necessity since manpower, equipment and training are limited in small, rural communities.

"Park rangers with the Corps of Engineers stationed at Marion Reservoir have been instrumental in developing training programs which cover emergencies that occur at the reservoir," said Marion County Sheriff Ed Davies.

JoAnn Knak, Emergency Medical Services Director, says, "It is crucial that all agencies work together. People vacationing on public lands have medical emergencies, boaters have accidents, skiers are injured and ice fishermen fall through the ice. Not every agency can be trained or have the equipment to work every emergency."

With this in mind, representatives from the agencies meet periodically to plan and train for various on-the-water emergencies. Exercises are designed around stated objectives which typically test communications, rescue and transport, crowd control, remote location capabilities and specific response with regard to agency policy and protocol.

Interagency training has included boat collision and extrication, basic swift water rescue, cold water/ice rescue, capsizing emergencies and body recovery. The availability of manpower, equipment and skilled rescuers is constantly assessed to meet present and future needs.

The seasonal emphasis during the winter is training for potential ice rescue, a real possibility in Kansas. Corps and state ice rescue specialists hone their skills with rescue scenarios of hunters and ice fishermen who have fallen through the ice. These scenarios involve safely locating and transporting victims.

At an ice rescue training session held at Marion

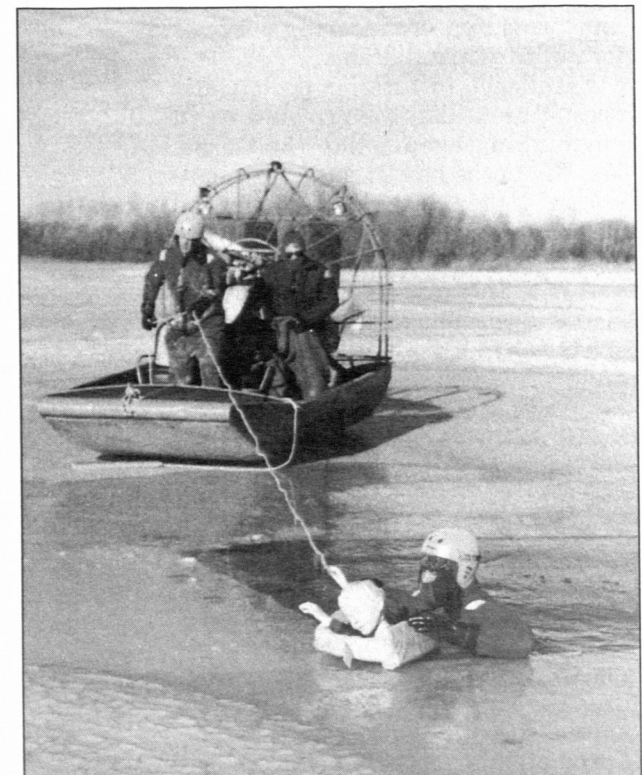
Lake this year, an air boat was demonstrated to be an effective means of rescue and transport.

Kansas DWP Conservation Officer Marvin Peterson says, "Safety is a primary concern, so the Kansas Department of Wildlife and the Corps of Engineers must work closely together."

To date, Corps rangers have trained about 35 state conservation officers in ice rescue, and the state has trained rangers at Marion Reservoir in personal watercraft operation and rescue.

Davies says the interagency training does more than provide rescuers with needed skills. "The camaraderie that develops between agency officers is another vital key to rescue operations. This is an example of synergy in its highest form. Agencies are working together to accomplish what each agency alone cannot."

(Terry Holt and Dale Davidson are park rangers with Tulsa District)



An airboat proves to be practical for winter rescues. (Photo by Terry Holt)

Barracks renovated quickly

Article by Alicia Gregory
Photo by Jonas Jordan
Savannah District

Bill Bryan, chief engineer for Moody Air Force Base, Ga., received a call from his boss—a dorm renovation project had been approved, but with the stipulation that the money be obligated by the end of March.

"When I hung up the phone, I realized I had three months to execute a \$3 million project," recalled Bryan. "I picked up the phone and called the Savannah District, U.S. Army Corps of Engineers."

The dorm upgrade was originally planned as a military construction project, which normally takes three years from conception to construction award. But under new Department of Defense criteria, the project was labeled as an operations and maintenance (O&M) project. Since this normally takes nine months from conception to construction award. That meant Savannah District had less than one-third the normal time to complete the project.

"It was a logical choice to have Savannah District work on this project because of the experience they have," said Bryan. The district is the Center of Standardization for Unaccompanied Enlisted Personnel Housing for the Army. "We had all of our chips on the table and bet them with Savannah District. If we didn't allocate this money, someone else in Air Combat Command was going to get it."

"We were asked up front if we could commit to this project," said David Futrell, Savannah District project manager. "The base engineers were committed, so they needed us to be committed."

The district recently upgraded two similar

dorms at Moody AFB. The last upgrade was completed in March 1995.

"The other two were basically the same layout as this dorm," said Vicki Stanley, Savannah District's construction project manager for the Moody AFB Project Office. "All three dorms were built from the same set of plans in the '50s."

"Moody sent the funding to start the project at the end of December; and the first meeting was set up the first week in January," said Stanley.

"They moved the entire design team here for two weeks to collect data and become familiar with our team," said Bryan. "We corrected some unforeseen site conditions and changed things that didn't work in the previous dorms, but we pretty much stayed with the previous designs used for the other dorms."

"Everyone knew the time frame we committed to and was ready to go," said Stanley.

Savannah District's Engineering, Construction, Project Management, Contracting and Information Management divisions worked one-on-one throughout the project. There was also a lot of direct contact between the district and the installation.

The Moody AFB Engineering Office worked closely with the base environmental office to provide information about asbestos in the building. The building's original designers furnished the drawings of the existing dorms to the project office.

After the design was finished, reproduction "kept the train moving" and in 15 days after the design was complete the plans and specifications were in Contracting for bids.

"We went straight from start to final," said Futrell. "There were no milestones along the way, just the advertising goal of Feb. 5." The upgrade will be completed in 1997.



These barracks were renovated in just three months with the help of Savannah District.

"We communicated with the district office constantly, wearing out the phone lines," said Bryan. "I also think having their project office co-located with us helped the process immensely."

"We don't want to give the impression that this is business as usual," said Futrell. "This is a unique situation. If everyone did not fall in line and make a commitment everyone would have failed, and that's everyone from Moody to the person in Contracting that prepared the final contract. But we *didn't* fail, and we know if called on we could do it again."

Corps has DoD's interior design experts

By Bernard W. Tate
HQUSACE

When you think of the Corps of Engineers, you may not think of interior design. The Corps is usually associated with navigation, flood control, recovery from floods and other disasters, environmental cleanup, supporting deployments, and providing engineering services for military installations.

Excellence in interior design just doesn't seem like the province of an engineering agency like the Corps. Yet, the Corps has 24 interior designers and is the Department of Defense's lead agency for interior design.

The recent partnership agreement with the International Interior Design Association (IIDA) is aimed at strengthening both the Corps' leadership in the field, and enhancing recognition of interior design's contribution to excellent facilities.

"The trend these days is toward providing 'turn-key' buildings," said Frank Norcross, the Corps' interior design proponent. "When we turn a building over to the customer, they want to just walk in, sit down at their desks, and go to work. Assuming that the money is programmed into the right pots, the Corps who makes turn-key jobs happen. The Corps often designs the whole package, from placing the foundation to deciding where the furniture goes."

Although the Corps has employed interior designers since 1974, interior design became a major issue in the Corps in 1987, when Lt. Gen. E.R. Heiberg III was Chief of Engineers. Since then, the Corps has significantly improved interior design support to its customers.

Initiatives include designating Omaha District as the Technical Center of Expertise in Interior Design, creating an interior design training course, increasing the USACE interior design staff, pub-

lishing an engineer regulation defining interior design services and USACE and customer responsibilities, developing new Corps of Engineer Guide specifications, and updating the Design Guide for Interiors, DG 1110-3-122.

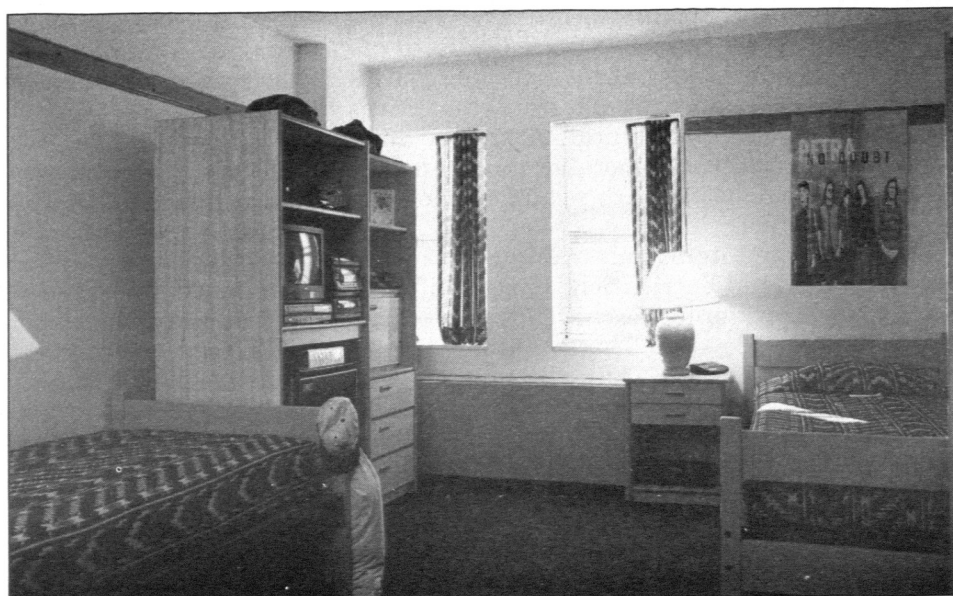
USACE has also recognized the importance of interior designers by including them in the Engineers and Scientists (Resources and Construction) career program since 1991. Since 1994, an interior designer has been included in the Chief of Engi-

neers Design and Environmental Awards jury.

"Interior design is a relatively new profession, and is fighting for recognition of its role and importance," said Norcross. "Many people confuse interior design with interior decorating. Interior design involves life and safety issues such as egress, accessibility for the physically challenged, ergonomic issues, privacy needs, and the interface of furniture with electrical and communications outlets. Our goal is to optimize the user's interaction with the built environment. When we can do this, we add significant value of the project."

The partnership agreement, signed May 7 by Lt. Gen. Arthur E. Williams, then Chief of Engineers, and Judith Hastings, IIDA President, is aimed in part at recognizing the contribution of interior design to facility design.

"This agreement recognizes the significant role that USACE interior designers have in the evolving field of interior design as practiced in the federal government," Norcross said. "The significance of the partnership with the IIDA is that we are going to work together to build quality interiors, promote recognition of the interior design field, promote competent interior design practice, and enhance public recognition of interior design's role in excellent interiors."



These barracks at Fort Huachuca, Ariz., were designed by the Corps of Engineers. (Photo courtesy of HQUSACE)

District, lab complete innovative test

By Cindy Fergus
South Pacific Division

They said it couldn't be done, but the South Pacific Division Laboratory (SPDL), together with Los Angeles District, recently successfully completed the first-of-its-kind large-scale permeability testing for the Seven Oaks Dam project.

The Seven Oaks Dam is part of the huge Santa Ana River Project being built by Los Angeles District in the San Bernardino mountains of southern California. The project is the largest currently being handled by the Corps of Engineers.

The dam will be a zoned earth and rockfill embankment, about 550 feet high. Because it is situated between the north and south branches of the San Andreas fault, it is designed for up to four feet of displacement.

During design of the dam, certain assumptions were made regarding the permeability of various zones within the dam to evaluate the embankment's seismic stability. In addition, the construction contractor considered building the upstream shell with materials of revised gradation.

Los Angeles District engineers wished to verify the design assumptions and analyze the contractor's alternative material, so they requested that SPDL test the materials to determine their vertical and horizontal permeabilities which are critical to the dam's seismic stability.

Standard laboratory permeameters are usually three-to-nine inches in diameter and measure only vertical permeability. The material to be tested was crushed rock with particle sizes up to 12 inches. The specifications called for this material to be placed on the embankment and compacted in two-foot lifts.

It was obvious that laboratory personnel would need to design and fabricate special large-scale permeameters to test this very coarse material.

Jim Farley, Geotechnical Branch, Los Angeles District, and Clyde Davis, Materials Engineer, SPDL, met with independent technical experts to discuss the best way to approach the problem. They decided that to get meaningful results, vertical permeability tests would be performed in a steel permeameter three feet in diameter by four feet long. Horizontal tests would be accomplished in a rectangular steel chamber three feet wide by three feet high by four feet long.

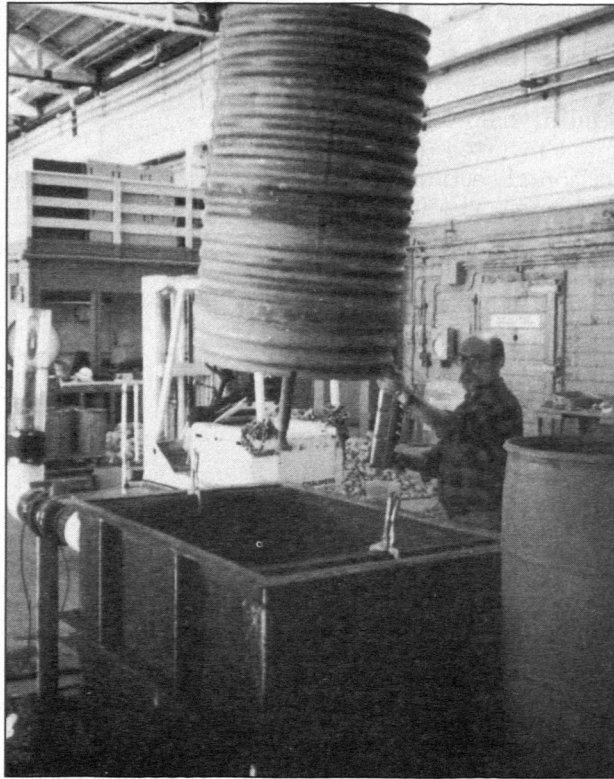
They also concluded that, since it's not practical to work with 12-inch rocks, the materials more than six inches in size would be scalped (discarded), and the test material would be proportionally graded between the six-inch size and the one-inch size. Material less than one inch would replicate the field gradation.

A vibrator plate compactor would be used to attain unit weights in the test sample similar to those attained in the field.

To prepare the sample for testing, construction personnel at the Seven Oaks Dam site sampled the material being produced by the crusher in the downstream borrow area. They scalped the plus-six-inch rock at the site and sent 22 tons of the remaining material to the lab for testing. At the lab, the material was sieved into stockpiles of various size rock. Material was then taken from the stockpiles and recombined to the desired gradation.

After several preliminary tests, a public briefing and demonstration of the large-scale permeameters was conducted April 1. The demonstration was attended by 20 representatives of Los Angeles and San Francisco districts, SPD, the California Division of Safety of Dams, and independent consultants.

The vertical permeameter is built from quarter-inch steel. In the bottom of the pipe is a perforated steel plate covered with several layers of screen upon which the test material is placed.



Claude Davis releases material from a mixing drum into the horizontal permeameter. (Photo courtesy of South Pacific Division)

The large scale horizontal permeameter is built from half-inch steel plate. Vertical perforated steel plates are located at each end of the sample, with a set of screens placed between the perforated plates and the sample.

A one-inch-thick piece of low-density closed-cell foam is placed on top of the sample and compressed by a steel cover which is bolted to the chamber around its perimeter. The foam creates a seal between the top of the sample and the bottom of the lid to prevent water from going around the sample instead of through it, resulting in an erroneous permeability measurement.

The horizontal permeability test tries to repro-

duce as nearly as possible the placement conditions of the material in the dam embankment, where the 12-inch embankment material is being placed and compacted in two foot lifts. The procedure for these tests, using six-inch maximum material, was to place the material in six-inch lifts, with compaction after each two lifts. The three-to-six inch material was placed first, and the large rocks redistributed in a random manner. This was necessary to minimize the "edge effect" that would result from large rocks resting against the edge of the permeameter and creating voids that would not exist in the prototype. It was also necessary to prevent large rocks from protruding above the surface of the lift and preventing efficient compaction by the vibratory plate.

The minus-three-inch material was then placed in a special mixer drum on loan from the University of California Richmond Field Station. This drum has a bottom release mechanism that allows dumping the material with a minimum of segregation. This material is then distributed uniformly among the previously placed three-to-six inch material.

The final lift was compacted for about 10 minutes with a 760-lb. vibratory compactor. After compacting, the foam was placed on top of the sample, and the top plate bolted into place. Permeability measurements were taken for three different heads.

The results of these large scale permeability tests validated the assumption made for the design analysis of the Seven Oaks Dam (.1 centimeter of water per second permeability).

Sample gradation and placement techniques have an important effect on the permeability of the tested material. The unique equipment developed for this project may be useful for examining the permeability of other coarse materials, and comparing the vertical and horizontal permeabilities for various placement techniques.

A video of the testing is currently being produced. For more information contact Bill Bechtell, Geotechnical Branch, SPD.

West Point kitchen rebuilt

By Jack J. Friedman
New York District

How do you keep serving 7.8 million meals a year to 4,100 hungry West Point cadets when your obsolete kitchen must undergo a complete reconstruction in a 34-month period?

This was the problem that confronted New York District, contractor CRKlewin, Inc., and architect/engineer Lev Zetlin Associates when planning began in 1993 on a \$27 million project to revitalize the U.S. Military Academy's 200,000-square-foot Food Processing Facility.

At the time, a food preparation staff of more than 300 was cooking three family-style meals daily in a kitchen that was state-of-the-art when Harry Truman was president.

Since the mess hall had to remain in service during construction, initial planning called for quartering off specific areas of the kitchen and renovating it in four progressive phases. Each phase was to be followed by down-time during which equipment would be moved into a small, temporary food preparation facility.

But inconvenience to staff and cadets, and safety concerns about construction near a mess hall were high. In addition, if any meals were missed due to construction, the penalty to the contractor would be \$16,000.

To minimize interference with mess hall operations, CRKlewin offered during a partnering ses-

sion to double the size of the temporary kitchen—a step that would permit renovation to proceed in one phase instead of four. This was accepted by the Corps as a no-cost change. It also would allow CRKlewin to complete the project early.

So a huge silver box was erected outside the mess hall at Christmas time to house the entire kitchen, loading dock and cold storage area. In this structure, daily meal production is maintained while construction and renovation proceed.

Completion of the entire project is still scheduled for March 22, 1998; however, all members of the project team fully expect completion at least eight to 12 months ahead of schedule.

The scope of work for the project includes furnishing and installing \$5 million in new kitchen and bakery equipment, \$7 million in mechanical upgrades, an upgrade of the sprinkler system, concrete masonry repairs, installation of new elevators, ceilings, flooring, masonry walls, painting, asbestos and lead abatement, demolition and site work, and \$2.6 million in electrical upgrades.

"The partnering process has increased effective communication, allowing teamwork to resolve issues with creative solutions," said Col. Michael F. Colacicco, Director of Housing Public Works at West Point. "It has also led directly to accelerating this project while substantially reducing its cost. The interaction between staff and construction workers has been effective, decisions have often been the result of group consensus."

Floodwall saves town, records history

By Steve Wright
Huntington District

Matewan, W.Va., is a small coal mining town, population 800, in a narrow river valley on the border of West Virginia and Kentucky. Like many towns in Appalachia, Matewan is long and narrow and squeezed between mountain and river. Cutting lengthwise through this confined space is both a railroad and a highway. The river, the Tug Fork of the Big Sandy, in summer is no more than a lazy stream. However, flood season can turn the Tug into a destructive force.

As a result of this geography, 36 damaging floods have been recorded in Matewan since 1862. The flood of record occurred in April 1977, when 10 inches of rain fell in as many hours. This raised the Tug Fork to 30 feet above flood stage at Matewan.

The devastation caused by the 1977 flood was the catalyst to gain Congressional approval for a comprehensive flood control program under Section 202 of the Water Resource Development Act of 1980. The act authorized the Corps of Engineers to design and build flood control measures near Matewan.

Huntington District's flood control measures in Matewan are a half-mile floodwall along the Tug Fork to protect Matewan's businesses and homes, and a ring wall around Matewan High School.

The floodwall reaches up to 22 feet above ground, with as much as 20

more feet extending below ground. The wall is a giant inverted concrete "T" with the horizontal section of the "T" as the foundation. The vertical section of the wall consists of cast-in-place concrete segments or monoliths.

Enhancing the surface on both sides of the floodwall are graphics representing the town and its history. One graphic depicts the famed Hatfield-McCoy feud, which was fought near Matewan 1882-1891. Others depict the West Virginia Mine Wars of the 1920s.

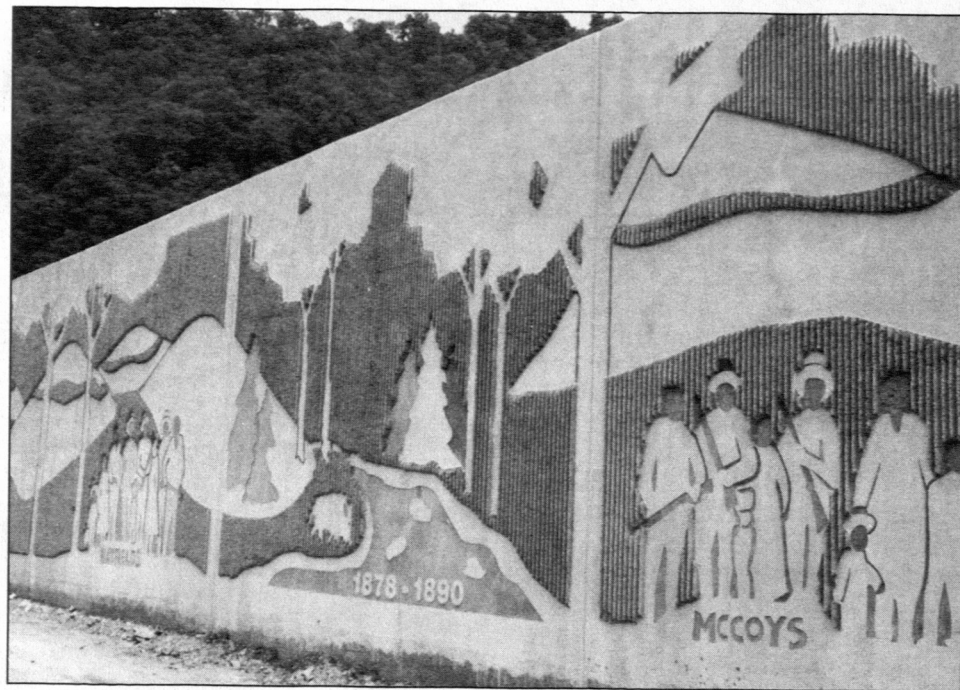
These and other graphics can be viewed from a path and two fishing piers on the river side of the wall.

Access to the river, walking path and fishing piers is gained through three openings in the wall. Each opening, located at each end and in the middle, has a swinging gate which can be closed during high water.

In addition to recreation access, the wall has seven other openings. Four are for highways, and three are for railroads. These openings have either swinging gate or sliding gates recessed into the floodwall. Regardless of the closure type, they are easily and rapidly closed.

The ringwall around Matewan's high school will be completed this summer before school resumes in the fall.

The floodwall also provides a rarity in the Appalachian region—level, vacant land. By placing the floodwall next to the river and adding fill inside the wall, eight acres will be added to the town.



These graphics carved on the Matewan floodwall depict the Hatfield-McCoy feud, which took place in the area. (Photo courtesy of Huntington District)

Matewan resident engineer Pat Morgan and construction representative David Wolfarth point out that the overall project involves more than building the wall.

"State route 49 had to be relocated from running through the center of town to parallel with the town beside the mountain," Morgan said. "Also, we have to develop an internal storm drainage system and modify the sewage system by adding four sanitary lift station."

"We are installing two miles of drainage pipe to create an effective storm drainage system," said Wolfarth. "The largest single component is 1,900 feet of 54-inch pipe extending up Warm Hollow. The existing storm sewer beneath the street will be significantly enlarged with the 54-inch pipe. We are also adding a pump station that will put collected storm drainage through the wall and into the river."

The Matewan resident office is also responsible for developing a subdivision at Mate Creek outside the floodwall. This 30-lot subdivision is part of the Matewan non-structural program. Houses not protected by the floodwall are raised in place to a level which will survive a 100-year flood. If they can't be raised for structural reasons, the owner can have the government buy the house. If the owner wishes, he can then use the government's money to buy land and build a home in the new subdivision.

The contractor, J.A. Jones Construction Company, started work on the Matewan project in September 1992 and expects to finish next month. The scheduled completion date was next spring, so the early completion will give Matewan protection one flood season early. The fully-funded project cost is \$57 million.

Supply agreement means savings on equipment

The Corps of Engineers uses a lot of heavy equipment, much of it with equally heavy prices. But thanks to recent agreements between the Corps and the Defense Supply Center Columbus (DSCC), Corps districts and divisions can purchase needed equipment at reduced prices.

"We want people throughout the Corps to know there's a way for them to save a lot of money on heavy equipment purchases," said Paul Mann, HQUSACE Logistics.

The DSCC in Columbus, Ohio, part of the Defense Logistics Agency (DLA), provides worldwide acquisition and parts support to military customers through the purchase of construction and civil engineering equipment, firefighting and material handling equipment, and prefabricated buildings. The center also provides parts support for these and related items.

For many years, the Military Interdepartmental Purchase Request (MIPR) office at DSCC has performed these services for the Corps,

resulting in substantial cost savings. During 1995, however, several initiatives strengthened the DLA/USACE alliance.

Ray Urena, HQUSACE Logistics, attended the 1995 DLA Customer Expo in Atlanta and was convinced that both DLA and the Corps would benefit from a closer partnership, especially in heavy equipment procurement.

In April 1995, Mann met with the DSCC Business Initiatives Directorate to explore how Corps personnel could be made aware of DSCC business initiatives.

Four regional information briefings were conducted to ensure that information about these programs was widely distributed among senior Corps management.

Since the meetings started, the DSCC MIPR office has purchased more than \$2 million in heavy equipment for the Corps, usually with substantial savings. One rough terrain crane purchased for Huntington District saved more

than \$600,000. New England District purchased several backhoe/loaders through DSCC and saved more than \$120,000.

In support of the Corps and other MIPR customers, DSCC issued long-term contracting instruments for heavy equipment that offer shorter obligation lead times, greater flexibility, product choice and leveraged buying power.

In addition, DSCC offers spare parts support for the equipment via the COPAD (Contractor Operated Parts Depot) Program, and the Corporate Contracting Initiatives.

COPAD offers customers a selection of more than 600 manufacturer's price lists for automotive and construction equipment parts. The average delivery time for the parts is 10 days, and list price discounts are as high as 45 percent for some products.

The Corporate Contracting Initiative also offers excellent delivery and leveraged buying power. Corporate contracts are issued to a vendor for their entire line of commercial

products, with the understanding that price discounts are to be based on the entire volume of business from all DLA hardware centers.

The benefit of this contracting arrangement is that the customer can go to any of the prime vendors' authorized dealers and purchase the products they need at the discounted price. Current DSCC corporate contracts include NAPA, Freightliner, John Deere and Komatsu.

Using DLA contracting resources will increase standardization and maintenance programs, assist USACE procurement resources, and reduce equipment costs. It is estimated that the Corps can save up to 23 percent on equipment costs by taking advantage of DLA's buying power.

For a briefing at your location, or additional information how DSCC can reduce your operating expenses, contact Deborah Raita (614) 692-2258. DSCC information is also available in the Internet at <http://131.74.26.2:8888>.

Vicksburg, WES study endangered turtle

By Karen Chaney
Vicksburg District

A small turtle found only in Mississippi and Louisiana is the subject of a study to determine the size of its population and how to avoid or minimize potential impacts by proposed Corps of Engineers work.

The ringed sawback turtle, designated a threatened species under the Endangered Species Act, is found only in the Pearl, West Pearl, and Bogue Chitto rivers. The monitoring program will evaluate how maintenance dredging along a small stretch of the West Pearl River can be done while avoiding or minimizing potential impacts to the turtle or its nesting area.

The Corps is considering resuming maintenance

dredging on about five miles of the 58-mile waterway. Currently, dredging has been halted by litigation, but Vicksburg District and the Waterways Experiment Station (WES) continue to gather data and formulate a plan that will avoid potential impacts on the turtle population.

An adult ringed sawback turtle may vary in size from about three to 8.5 inches with yellow markings on its head, yellow rings on its upper shell and a yellow undershell. It seems to prefer sunny river stretches with a moderate current, numerous basking logs and sand beaches for nesting.

To date, the largest populations have been found above the Ross Barnett Reservoir, below the Jackson metropolitan area on the Pearl River, and below Franklinton, La., on the Bogue Chitto.

The biological assessment done by the Corps as part of the West Pearl River Navigation Project Final Environmental Impact Statement concluded that the project could adversely affect the turtle. The U.S. Fish and Wildlife Service's biological opinion, done as a result of the Corps' assessment, determined that the project would not jeopardize the continued existence of the turtle if certain measures were implemented.

"The Corps found two main potential impacts from the dredging," said Corps biologist Gary Young. "The first was from the actual dredging—there was a possibility a turtle would be caught up in the dredge. The second hazard came from depositing dredge material along the river banks.

"On the West Pearl, dredges deposit material to the side of a stream to create or extend existing sand bars," Young explained. "The Corps-created sand bars may serve as habitat for the turtles and also serve the public as beaches. The concern is that the dredges will deposit material

either on top of the turtles' eggs or on the hatchlings in the spring."

Young said the Corps agreed to deposit dredge material only on portions of sandbars that are still underwater and to have a biologist monitor placement of the material.

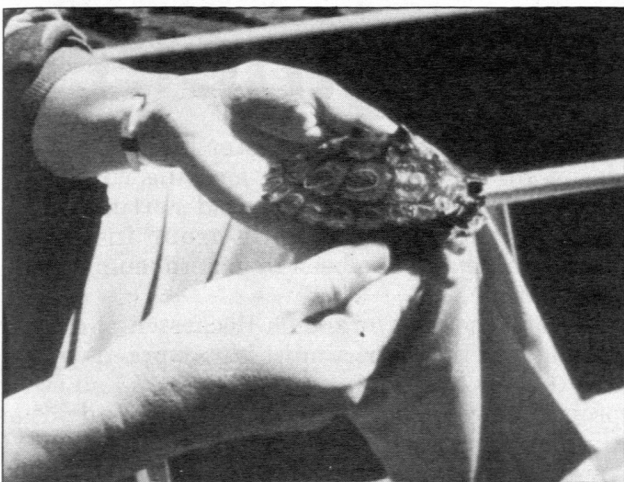
The dredging project involves maintenance dredging on about 10 percent of the 58-mile West Pearl Navigation Project. The WES monitoring program has three objectives:

- To identify potential nesting habitat and basking structures in the project area.
- To monitor the ringed sawback turtles and their location relative to the dredging.
- To monitor turtle behavior.

"So far we've surveyed the population in the section to be dredged," said Dena Dickerson, the WES research biologist working on the program. "Later we'll be surveying during dredging and post-dredging. What we've found so far is that very few ringed sawbacks live in the area to be dredged because that part of the river is just not very good habitat. But, they do occur in small numbers, so we have to keep that in mind. We're also looking at available habitat; that is, habitat present before dredging. Then, we'll advise the district during and after the dredging."

Ideally, the project should be able to keep what habitat is there and possibly even improve it. "What these turtles need are open sandbars and it is possible that the dredging could actually create a number of sandbars in the area," Dickerson said.

Although work is stopped right now, the monitoring will continue. "Even if the project doesn't go forward, there will still be enormous value in the information we have gained by the monitoring program," Young said.



An adult ringed sawback turtle has yellow markings on its head, yellow rings on its upper shell and a yellow undershell. (Photo courtesy of Vicksburg District)

Making world safer was goal for engineer

By Bob DiMichele
Huntsville Engineering and
Support Center

"I'm confident it will be a reality," said Bob Smith, speaking of efforts to destroy the toxic chemical weapons of the U.S. and Russia.

While the bilateral effort to destroy the two nations' stockpiles of aging chemical weapons moves slowly through environmental permitting processes, political reviews and public safety concerns, Smith speaks optimistically of the pro-

gram's success with personal conviction.

After all, he managed construction of the first chemical agent disposal facility in the U.S. He also spent eight months in Moscow as the sole government representative to the Chemical Weapons Destruction Support Office.

Now, at retirement after 27 years of government service, the former Utah Area Engineer knows that the "capstone" of his career will one day make the world a safer place.

In 1989, when the chemical agent disposal facility project started in Tooele, Utah, Smith took the role of Tooele Resident Engineer.

Under Smith's construction engineering guidance and supervision, the Corps managed construction, equipment installation and pre-commissioning of the Tooele disposal facility. That took about five years and \$500 million. "The work was fast-paced and intensive. There were 1,000 workers working two shifts during 20-hour days," Smith said.

Because of environmental and public health concerns for absolute safety, Smith faced regular audits and reviews. "I met lots of people with lots of different agendas," Smith said. "But we passed every audit or examination."

Instead, Smith's most difficult challenge at Tooele involved documenting for environmental compliance. "The Army was always willing to deliver what was asked for by the state, but we both had a steep learning curve," Smith said. "Our submissions led to more state questions, but never a change in the direction of construction. Questions involved documentation rather than improper design or construction."

In August 1995, he went to Moscow to support Russia's chemical demilitarization as part of a new job with Huntsville Center. The Huntsville Center provides planning, cost-estimating and contracting strategies for the Russian program.

"I enjoyed my work in Russia both professionally and personally," said Smith. The Russians were competent, dedicated professionals and he found them open, not secretive. "Of course, I'd have liked to see their program move more quickly, but the Russians have environmental laws, construction standards and fiscal constraints just like we do," he said. "For every frustrated American there was a Russian with a reason for delay."

Like the Americans, the Russians plan to destroy chemical weapons at their current storage facilities, but

the Russians plan to use neutralization technology. The Americans are using incineration to destroy their chemical weapons.

The first step for the Russians is developing a neutralization technology capable of destroying their stockpile. During the past year, the Russian-American Joint Evaluation Program has found a process that neutralizes chemical warfare agents in a test tube in a lab at Edgewood Arsenal, Md. The joint effort then moved back to Russia to repeat the experiment to prove that the neutralization technology was safe and effective.

Smith began his efforts in the program during the Russian portion of the joint evaluation when the American team was going into Russia. He worked the logistics of travel, chemical transportation and safety.

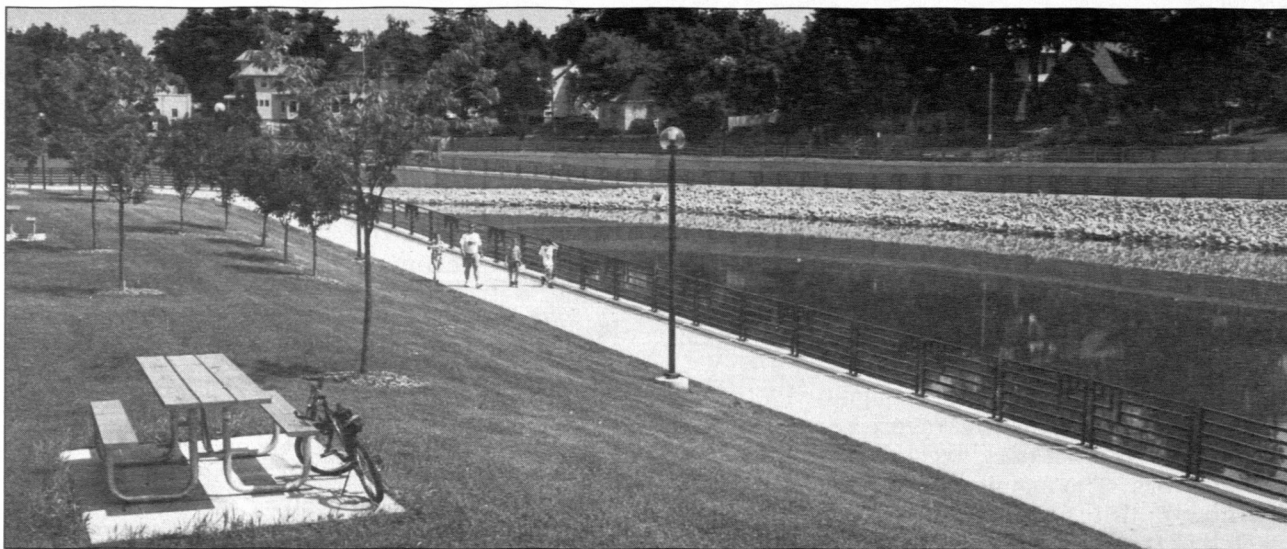
Smith said the Russians now face the problem of increasing the neutralization reaction from the test tube to industrial levels. During his eight-month stay in Moscow, he met with the Russians every week to discuss issues concerning their plans.

He retired March 30 and moved back to Salt Lake City, Utah, just 90 minutes from the destruction facility in Tooele County. He plans a new career as a consultant.



Bob Smith, now retired, worked to make the world safer by destroying chemical weapons. (Photo courtesy of Huntsville Center)

One project, two winners



The flood control project in Rochester, Mass., won the Award of Excellence in the 1996 Chief of Engineers' Design and Environmental Awards. It played an important role in the careers of George Fortune and Deb Foley. Their stories are featured below. (Photo courtesy of St. Paul District)

Perseverance pays off for engineer

By Bernard W. Tate
HQUSACE

Eighteen years is a long haul, but that's how long George V. Fortune worked on the Flood Control Project in Rochester, Minn.

Perseverance pays off, because the project won the Award of Excellence in the 1996 Chief of Engineers Design and Environmental Awards Program, and Fortune, a civil engineer with St. Paul District, won USACE's first-ever Design Engineer of the Year Award.

The award came about when engineers noticed that the Corps offers no design engineering award.

"If you look at the list of awards that the Corps offers, there are many," said Philip M. Brown, Deputy Chief of Engineering Division at HQUSACE. "There's the Hardhat of the Year, the Construction Management Excellence Awards, the Architect of the Year, and so on. They have everything, but there's no specific design engineer award."

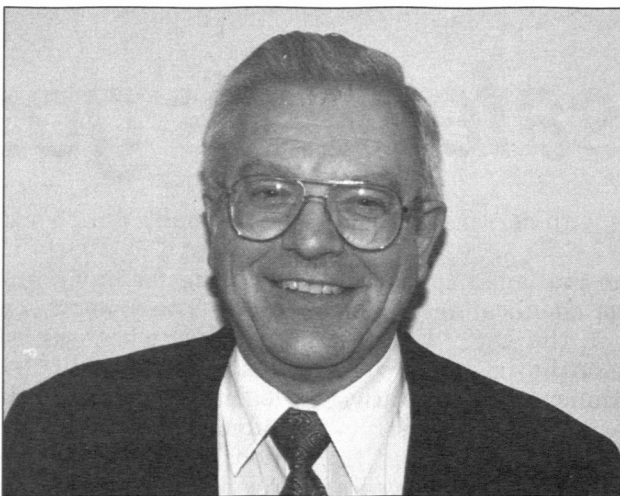
Brown said the original suggestion for the Design Engineer of the Year Award came from Steve Stockton, Chief of Engineering Division at headquarters, and the idea evolved as several people discussed it. This award is an effort to honor those in the districts having the most input to detailed design.

"We talked about it here in Engineering Division—Steve, Doug Kamien, Charlie Balding and myself," said Brown. "And we said, 'Let's try it.'"

They decided to link the award to the Chief of Engineers Design and Environmental Award. "The projects being honored must have had some

good engineers and some good thought behind them when they were designed," Brown said.

"This year we had one Award of Excellence in civil works, so choosing the project to consider was easy," Brown said. "Then we asked, 'Was there one special person connected with this project?' I called St. Paul District and North Central Division and they all agreed that George Fortune was involved from start to finish. There were a lot of people on the team, but they came and went during the years. George was behind it all the way and everyone agreed he would be worthy of such an award."



George Fortune is the Corps' first Design Engineer Award winner. (Photo courtesy of St. Paul District)

"I started with the Rochester project in 1978 doing survey requests and meeting with local county and city engineers," said Fortune. "We have a general engineering group in Design Branch here and I've been in general engineering all this time."

"A lot of people worked on Rochester, of course; I think half the district must have worked on it at one time or another," said Fortune. "I had other projects during the years, but I was in and out of the Rochester project throughout that time. I guess I provided continuity along the way."

"I'm the kind of person who likes to stick with a task and see it through," said the 30-year veteran of St. Paul District. He worked on the Pohang Petroleum Storage Facility in Korea as a lieutenant with the 44th Engineer Battalion and extended his tour to finish the facility, serving from January 1962 to July 1964.

Fortune received his award plaque and a letter from the Chief of Engineers during St. Paul District's annual organization day on June 21.

According to Brown, the Design Engineer of the Year Award will be given every other year, on the same schedule as the Chief of Engineers' Design and Environmental Awards. The award will be presented at HQUSACE in the future, unless the division or district requests otherwise, as St. Paul did this year. Teams will also be eligible for the award, as well as individuals, if a group of engineers were equally responsible for design of a project. The Design Engineer of the Year will be selected by a committee in the headquarters Engineering Division.

She defied prof, earned manager award

By Kelly Cahalan
St. Paul District

One day, after a class in civil engineering, Deb Foley's professor told her that he did not teach engineering to women and he would appreciate it if she did not come back the following day. At the time, Foley was not even sure she wanted to pursue a career in civil engineering; however, she was determined not to let this professor dictate her future.

In 1976, when women accounted for less than 2 percent of all engineering graduates nationwide, Foley became the second woman to graduate from the civil engineering program at the University of New Hampshire-Durham.

Nearly 20 years later, Foley, now Chief of Programs Management Branch with St. Paul Dis-

trict, was named the Corps of Engineers' Project Manager of the Year. Foley was chosen from among 21 nominees for her exceptional leadership and management. She received her award in a ceremony at the 1996 Programs and Projects Manager Conference in Nashville, Tenn., on May 15. This is a new award for the Corps.

Foley's leadership as project manager for the Rochester, Minn., Flood Control Project has won widespread recognition for the district. The project was named one of the "Seven Wonders of Engineering" in Minnesota by the Minnesota Society of Professional Engineers and it won the Award of Excellence, the highest award presented in the Chief of Engineers Design and Environmental Awards.

The Rochester Project was authorized for study in 1936. After several delays, Congress approved

engineer and design work to begin in 1976. Foley began working on the project in 1986. Construction began in 1987. Last August, the project was completed on time and under budget.

"Many people worked their entire careers on the Rochester Project and never had the chance to see anything actually built," said Foley. "I was really pleased to be able to work on it during its final stages and watch the huge construction efforts."

Foley's negotiating skills and customer-service orientation gained the respect of Rochester city officials, who awarded her the Mayor's Medal of Honor and a key to the city.

"One of the most challenging aspects of the project was trying to create innovations to best meet

Continued on page 11

Around the Corps

General officer promotions

Maj. Gen. Anthony Kropp, Director of Mission Support and Assistant Deputy Chief of Engineers for Reserve Affairs, was promoted from brigadier general on July 11.

Col. Rick Capka, Assistant Chief of Staff, Engineer, of U.S. Forces, Korea, was promoted to brigadier general on July 10.

Kropp will remain in his current position; Capka will assume command of South Pacific Division on Aug. 2.

New CERL director

On June 27, Secretary of the Army Togo West approved the appointment of Dr. Michael J. O'Connor

as permanent civilian Director of the Construction Engineering Research Laboratories (CERL) in Champaign, Ill. O'Connor succeeds CERL's first director, Dr. L.R. Shaffer, who died in May 1994. O'Connor has served as Technical Director of CERL since that time.

In his role as director, O'Connor will head CERL's \$80 million annual

research and development program. This program creates and fields technology to ensure that military installations support a trained and ready Army in an environmentally sustainable and affordable manner. CERL also supports the civil works and military engineering missions of the Corps of Engineers.

O'Connor will be a member of the Senior Executive Service and will direct a staff of 587, consisting of 361 federal and 226 University of Illinois faculty, students, or other contract employees.

Hammer Award

On July 16, H. Martin Lancaster, Assistant

Secretary of the Army (Civil Works), presented the Hammer Award to nine headquarters and 16 field personnel for their leadership in USACE's Operations and Maintenance (O&M) Plan of Improvement. This plan reduced management layers and focused accountability in the O&M organization, reduced budget paperwork, compressed O&M regulations from 89 to seven, and developed measures of how well we serve our customers at each level of the Corps.

The Hammer Award is presented by Vice President Gore's National Performance Review for exceptional efforts by federal agencies to cut red tape, put customers first, get back to basics and empower their employees.

Top Corps architect

John T. Dismukes III, chief of Savannah District's Architectural Section, is the Corps' 1996 Architect of the Year. He received the award at the USACE anniversary ceremony on June 21 in Washington, D.C.

When Dismukes was appointed chief of the Architectural Section, he added two interior designers to the staff and established the first co-op student position in the district. He insured that students are given real projects where they visit construction sites and learn valuable work habits.

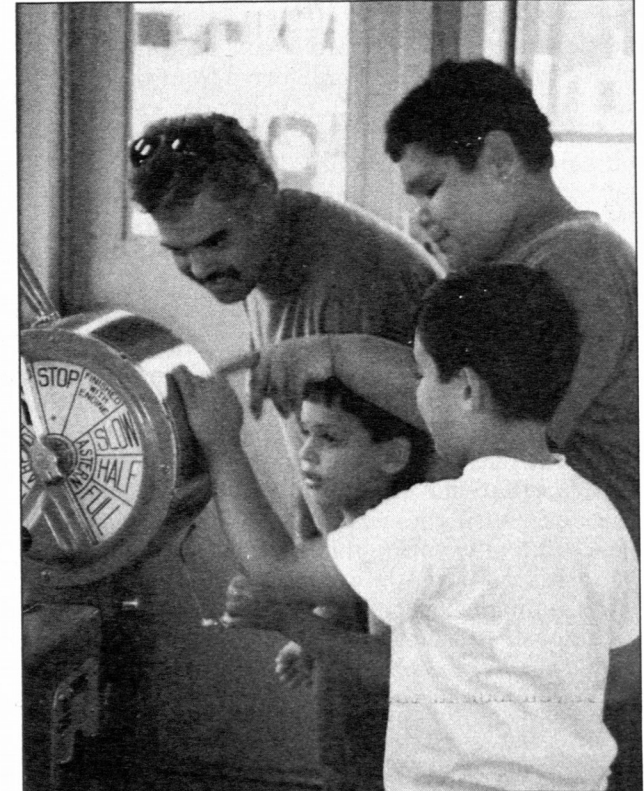
Because of his reputation, Dismukes was name-requested by the chief of the Medical Facility Office at HQUSACE to be the review architect for an ambulatory care center in Saudi Arabia. He was also name-requested by the Saudi National Guard (through the Army Material Command) to assist in reviewing a medical facility.

Dismukes assisted the South Atlantic Division architect in preparing "Customer Oriented De-

sign" which emphasizes customer involvement in the early stages.

During the past 12 months, Savannah District has won four major architectural design awards, all for projects under Dismukes' supervision.

Dismukes is a 13-year Corps veteran. His section reviews all architecture designs, handling more than 100 projects every year. In-house design projects total about \$155 million yearly, with projects varying in size from \$1 million to \$45 million.



A father and his three sons check out the lee helm aboard the *MV Hayward*. (Photo by Vince Elias, New York District)

MV Hayward open house

Hundreds of people visited the Corps' debris collection vessel *MV Hayward* during Sea Fest 96 July 13-14 in New York Harbor.

One of New York District's missions is to collect and remove drifting debris from the waters near New York.

The *Hayward* is a 390-ton, 26-year-old former lightship specially-fitted for this job. The 124-foot vessel is powered by two diesel engines that give her a top speed of 14 knots.

The multi-purpose *Hayward* also drops buoys for crucial dredging projects and has firefighting capability.

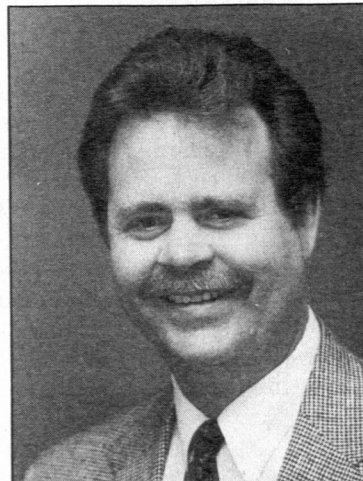
During Sea Fest 96 the *Hayward's* crew docked near the *USS Intrepid* aircraft carrier museum, lowered the gangplank and opened the hatches for the public to board.

Guests were treated to a tour of the bridge, engine room and upper decks, and they saw a display of some items the *Hayward* has collected. During her career, the *Hayward* has recovered a whale carcass, helicopter, drowned giraffe and a 30x30-foot house.

The *Hayward* patrols the Port of New York from Sandy Hook, N.J., to the Hudson, Harlem and East Rivers, and the western part of Long Island Sound and seven New York counties with a frontage of 755 miles.

Correction

The headline "TEC builds naval facilities in Egypt" in the June *Engineer Update* was incorrect. It should read TAC, for the Transatlantic Programs Center.



John T. Dismukes III



Deb Foley is the 1996 Project Manager of the Year. (Photo courtesy of St. Paul District)

Project manager award

continued from page 10

the needs of the customer at the lowest possible cost while having to work within very specific district regulations," Foley said. "We had a really devoted team who wanted it to be a high quality project. I headed the project, but they did it."

The project cut \$26 million from its estimated cost of \$123 million through competitive construction bids, value engineering, teamwork and innovation. One innovation devised by the team was the use of sod and soil over rip-rap to reduce vandalism, to soften the look of the riprap and to provide more green space along the river.

In addition to the enormous effort directed at the Rochester Project, Foley is also project manager for the Upper Mississippi River Environmental Management Program (EMP) which currently includes about 30 projects. She has also managed several flood control projects in Minnesota and Wisconsin, including the coordination of a new construction start with the Wisconsin Department of Natural Resources and a local community.

Winner juggles job, long commute, family

By Sandra Clawson
St. Louis District

The demands of a full-time job, a family and marriage are difficult to manage. When you add a two-hour drive one way to get to work, to most people it seems almost impossible. Despite the obstacles, Kerry Powell of St. Louis District has earned the Secretary of the Army's Outstanding Small and Disadvantaged Business Utilization (SADBU) Specialist of the Year Award.

Powell's husband, Staff Sgt. Steven Powell, is stationed at Fort Leonard Wood, Mo., and Powell chose to make the 142-mile drive from there to St. Louis District's SADBU office four days a week.

"We sat down and talked about the drive," Powell said. "We have a mutual respect for each other's careers. I'm not going to get in his way and he isn't going to get in my way. I wanted this job, so rather than put him and my children out, I put myself out."

Tough-minded women run in Powell's family.

"My grandmother had a big influence on my life," Powell said. "She was the hardest-working person I've known. During World War II she helped build ships and she spent the rest of her life as a rancher. She was never afraid of anything. Whatever was put in front of her she went full-force until she was through and made it happen. She always taught me there's nothing that you can't do if you have the will to do it. I've always remembered that and applied it to my life."

Powell fills her days off by spending quality time with her husband and children, Brandon, 15, Candy, 13, and Cole, 7.

"My children are very independent, much like my grandmother and me," said Powell. "It's fortunate that my children are older. If they weren't, I probably couldn't have a job with a two-hour commute each way. My two older kids help out tremendously by making sure their little brother gets off to school and that he has someone to come home to."

"My husband's comment about the 284-mile round-trip was, 'Only you would do it!'," Powell said. "Some people ask why we don't live half way. We decided that one of us needed to be close to the kids in case there was a problem at school or home."

"I've gotten used to the drive, which I find really scary," Powell said. "I get up at about two in the morning and I leave about three and somehow the car gets me here. By the time I get home it's 7 o'clock in the evening, a pretty long day."

But the long work day and the associated responsibilities do not interfere with the excellence of Powell's work, and she has the award to prove it.

"She was given this award because of her personal commitment to enhancing the small business program and awarding over 50 percent of all contract dollars to small business enterprises," said Lt. Col. John Jones, deputy district engineer. "This contributed to the overall success of the Army small business program."

"If I were to give credit for my success, it would be to the Corps family that I had at Pacific Ocean Division," Powell said. "They were good to me. The opportunities were there if someone wanted them. They brought me a long way as far as my professional career goes."

Powell's advice for people starting out with the government is, "Don't be afraid to dive in and go



Kerry Powell is the Secretary of the Army's Outstanding Small and Disadvantaged Business Utilization Specialist of the Year. (Photo courtesy of St. Louis District)

full-force at whatever task you've been given. Don't be afraid of making mistakes because someone will be there to pick you up and show you the right way. Just go for it!"

British officer finds warm welcome in South

By Patty Kay Elliott
Vicksburg District

His predecessors haven't worked on the bayous and rivers of the deep South for more than 160 years. At that time, both the environment and the people were harsh to the British Royal Engineers.

But for Capt. David Brambell of the Royal Engineers, his experiences and his reason for being here are purely positive.

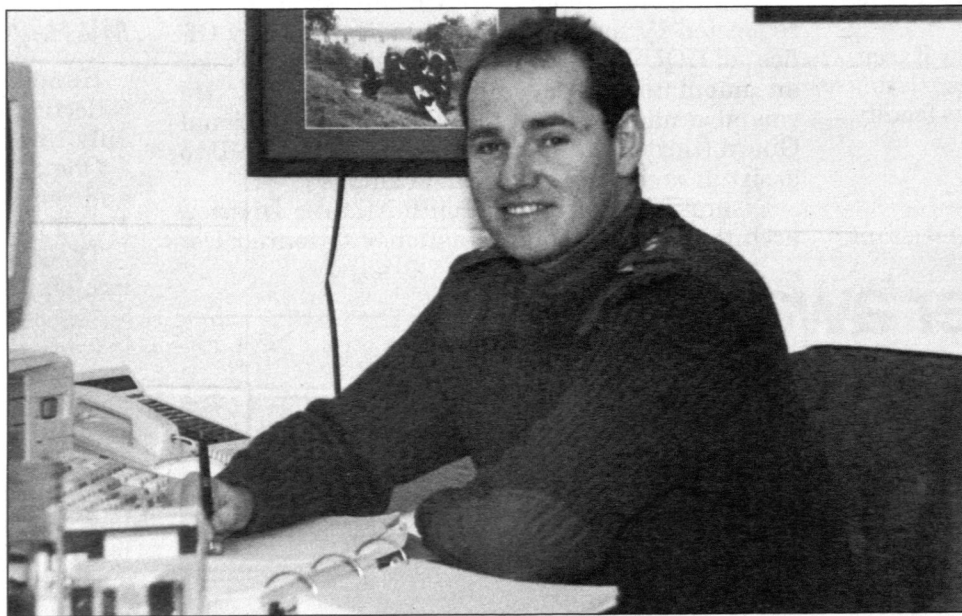
Brambell has been assigned to Vicksburg District to gain experience toward earning the British equivalent of a registered professional engineer's license. His bride, Emma, came to the U.S. with him.

"I have the opportunity to do some things here I wouldn't have at home," Brambell said. "To complete the training, I have to demonstrate that the experience is relevant and at the right level of responsibility."

Brambell's first Corps' assignment was in the Greenwood Area Office supervising contract administration on excavation for the \$5.5 million Alligator-Catfish flood control structure south of Greenwood.

"Supervising this contract was one of the most valuable engineering experiences I'll take back with me," Brambell said.

One of his biggest challenges,



Capt. David Brambell, British army, spent more than a year in Mississippi gaining experience for his professional engineer's license. (Photo courtesy of Vicksburg District)

Brambell reported, was getting used to "imperial units" rather than the metric system he is used to at home. "It can be a complete nightmare," he said. "The only thing we use pounds for is shopping for a 'pound' of beef."

Brambell has recently moved to Vicksburg, working on Demonstration Erosion and Control projects in the headwaters of the Yazoo Basin.

"I had no preconceived ideas of

what to expect in Mississippi," Brambell said. "What has impressed me most is how friendly everyone is and how beautiful the state is."

He's had no problem adapting to the Southern taste in food, finding catfish "excellent," but grits "bland." He's also developed a taste for iced tea. What has he missed most about the United Kingdom? "Warm bitter beer with a head on it."

One thing he has in common with "natives" is a respect for the mighty Mississippi River. "I couldn't believe how big it is. It's just enormous," he said. "Flood control is not as significant a problem in the United Kingdom as here."

Brambell will be assigned to the Military Engineer Services Branch at the Royal Naval Base in Faslane, Scotland, upon his return to the U.K. this month.

"The Army in Britain is getting bigger; it's all coming back from Germany," he said. "They're building barracks like crazy."

When the Brambells leave, they will take some warm memories of their stay in Mississippi. "Sometimes, when you're an outsider, it's hard to get in," Brambell said. "I'll remember how welcoming everyone has been and how genuinely interested they were in us."

Brambell enlisted in the Royal Engineers in 1987 as a second lieutenant after graduating from the University of Southampton with a degree in civil engineering. His assignments have taken him to Germany and the Middle East. He arrived in Vicksburg in June 1995 to complete the required site work and design office phases of Professional Engineer Training for the Royal School of Military Engineering.